JCNSP
Journal of Clinical Nursing Studies and Practice
https://journal.stikespemkabjombang.ac.id
Volume 02 Number 02
November 2026
e-issn: 3124-7466

THE RELATIONSHIP BETWEEN PARITY AND THE INCIDENCE OF PREECLAMPSIA AT JOMBANG REGIONAL GENERAL HOSPITAL

Safira Tri Cahyani[1], Rodiyah[2]

1. Sarjana Keperawatan
2. STIKES Pemkab Jombang

Submitted:
27 October 2026
Accepted:
30 October 2026

Cresponding Author:
Rodiyah
Stikes Pemkab Jombang
Jl. Padan wangi area sawah, Kecamatan Diwek, Kabupaten Jombang, Indonesia

Email:
azizdanahsan@gmail.com

ABSTRACT

Preeclampsia is one of the complications of pregnancy influenced by various factors, including age, parity, gravidity, obesity, and other comorbidities. Preeclampsia during pregnancy can cause various serious complications for both the mother and the fetus. This study aimed to determine the relationship between parity and the incidence of preeclampsia at Jombang Regional General Hospital. The research design used a correlational analytic method with a cross-sectional approach. The population consisted of all mothers giving birth at Jombang Regional General Hospital, totaling 281 respondents, while the sample included 74 mothers selected using a random sampling technique. Statistical analysis was performed using the Chi-Square test. The results showed that most respondents (51.4%) were multiparous, totaling 38 respondents, and the majority of respondents (70.3%) did not experience preeclampsia, totaling 52 respondents. Statistical analysis obtained a p-value of 0.003, where $p < \alpha$ (0.05), indicating a relationship between parity and the incidence of preeclampsia at Jombang Regional General Hospital. Preeclampsia can be detected early through routine antenatal care (ANC) examinations. The findings of this study indicate a significant relationship between parity and the incidence of preeclampsia among mothers giving birth at Jombang Regional General Hospital.

Keywords: Parity, Preeclampsia, Women Giving Birth

Copyright © 2026 by *Cahyani, et al,* published by UPPM STIKES Pemkab Jombang is licensed under CC BY 4.0
https://doi.org/10.33023/jikep.v11i3.3444

Introduction

Preeclampsia is a serious pregnancy complication characterized by increased blood pressure and protein in the urine. This condition is generally caused by a malfunctioning placenta (Toruan et al., 2025). According to the Preeclampsia Foundation (2023), preeclampsia and eclampsia are the second leading cause of maternal death after hemorrhage.

In Indonesia, the incidence of preeclampsia is reported at 5.3%, equivalent to 128,273 cases per year (Ministry of Health of the Republic of Indonesia, 2023). The prevalence of preeclampsia in East Java Province was recorded at 14,989 cases. Data from the East Java Provincial Health Profile shows fluctuations in the number of preeclampsia cases in Jombang Regency from 2022 to 2024. In 2022, there were 700 cases of preeclampsia, a sharp increase in 2023 to 1,033 cases, and a decline in 2024 to 712 cases (East Java Provincial Health Office, 2024). Despite the decline in the number of cases in 2024, the incidence of preeclampsia in Jombang Regency remains relatively high and fluctuates from year to year.

One of the most common pregnancy complications experienced by pregnant women is preeclampsia. Preeclampsia during pregnancy can cause various serious complications for both the mother and the fetus. For the mother, this condition can lead to eclampsia, placental abruption, subcapsular hepatic hemorrhage, blood clotting disorders, retinal detachment, and heart problems that can lead to shock and even death. Meanwhile, for the fetus, preeclampsia can inhibit intrauterine growth, cause premature birth, neonatal asphyxia, intrauterine fetal death, and increase perinatal mortality and morbidity (Santi et al., 2022).

Preeclampsia is a pregnancy complication influenced by various risk factors that can increase the likelihood of this condition occurring in pregnant women. One factor that triggers preeclampsia in pregnant women is parity. This is in line with Latifah's (2023) research on the factors of age, parity, and body mass index (BMI) of pregnant women related to the incidence of preeclampsia in Tangerang City. Of 93 respondents, analysis using the Chi-Square statistical test produced a p-value of 0.003 for the parity variable. This indicates a significant relationship between parity and the incidence of preeclampsia at Tangerang City Regional Hospital (Latipah et al., 2023).

In maternal health, parity is a crucial factor to consider because it is associated with complications during pregnancy. Parity is a factor that can influence the development of preeclampsia in pregnant women. The more frequently a mother gives birth, the greater the likelihood of her reproductive organs experiencing decreased function and flexibility. Suboptimal reproductive organ conditions can disrupt endothelial function by reducing blood flow, oxygen, and nutrients to the placenta. This can trigger reactions to toxic or sensitizing substances that affect the endothelium, thereby increasing the risk of preeclampsia (Pramesti et al., 2024).

Based on the description above, the researcher feels it is important to conduct research on "The Relationship between Parity and the Incidence of Preeclampsia at Jombang Regional General Hospital"

Methods

The research design in this study was quantitative with a cross-sectional approach. The population in this study were all mothers giving birth at Jombang Regional General Hospital with an average population of 281 respondents per month. The sample in this study was a portion of mothers giving birth at Jombang Regional General Hospital who met or represented the population. The sample was taken by fulfilling the inclusion and exclusion criteria. The inclusion criteria for this study were complete medical records of mothers giving birth at Jombang Regional General Hospital, having clear parity status, and being recorded in complete data. Meanwhile, the exclusion criteria for this study were mothers giving birth with a history of chronic hypertension or eclampsia before this pregnancy.

The sample size for this study was 74 women giving birth. The sampling technique used was random sampling. The independent variable was parity, and the dependent variable was the incidence of preeclampsia.

The data collection technique in this study used secondary data sourced from patient medical records. The data collected included general characteristics of the respondents (maternal age and gestational age) as well as study-specific variables. Data analysis in this study used univariate analysis and bivariate analysis using the chi-square statistic. This study received ethical approval under approval number 15/KEPK/II/2026, dated February 9, 2026.

Result and Discussion

The results of the study "The Relationship Between Parity and the Incidence of Preeclampsia at Jombang Regional Hospital" are presented in the following table.

Table 1. Frequency Distribution of Respondents

Based on Maternal Age and Trimester

Age	f	%
<20	2	2.7
20–35	64	86.5
>35	8	10.8
Total	74	100.0
Gestational Age		
Second Trimester	12	16.2
Third Trimester	62	83.8
Total	74	100.0

Source: Secondary Data, 2025

Based on table 1, it shows that respondents aged 20-35 years were 64 respondents (86.5%) and almost all of them (83.8%) were in the 3rd trimester of pregnancy, amounting to 62 respondents.

Table 2. Frequency Distribution of Respondents by Parity

Parity	*f*	%
Primipara	28	37.8%
Multipara	38	51.4%
Grand multipara	8	10.8%
Total	74	100.0%

Source: Secondary Data, 2025

Table 2 shows that the majority (51.4%) of respondents fall into the multiparity category, amounting to 38 respondents

Table 3. Frequency Distribution of Respondents by Preeclampsia Status

Preeclampsia	*f*	%
Preeclampsia	22	29.7%
No preeclampsia	52	70.3%
Total	74	100.0%

Source: Secondary Data, 2025

Table 3 shows that the majority of respondents did not experience preeclampsia (70.3%) in the non-preeclampsia category, amounting to 52 respondents.

Table 4. Frequency Distribution of Respondents

Based on Preeclampsia

Preeclampsia						
Parity	Preeclampsia		No preeclampsia		Total	
	f	%	f	%	f	%
Primipara	10	35.7	18	64.3	28	100.0
Multipara	6	15.8	32	84.2	38	100.0
Grand multipara tipara	6	75.0	2	25.0	8	100.0

Source: Secondary Data, 2025

Table 4 shows that most respondents with multiparous parity did not experience preeclampsia, amounting to 32 respondents (84.2%). The results showed that most (75.0%) respondents with grandemultiparous parity experienced preeclampsia, amounting to 6 respondents, and only a small portion (15.8%) of respondents with multiparous parity experienced preeclampsia, amounting to 6 respondents. Based on the results of the Chi-square test, it shows that the calculated p value is 0.003 $<\alpha$ (0.05), so H0 is rejected and H1 is accepted. This shows that there is a relationship between parity and the incidence of preeclampsia in mothers giving birth at Jombang Regional Hospital.

Parity in Mothers Giving Birth at Jombang Regional General Hospital

Based on the research results, it was found that almost all respondents were aged 20-35 years (86.5%), followed by those aged > 35 years (10.8%), and those aged < 20 years (2.7%). This indicates that the majority of respondents were of reproductive age. A woman's reproductive age is 20-35 years. This reproductive age is the safest period for pregnancy and childbirth because at this age the risk of complications during pregnancy is lower (Mustaghfiroh et al., 2020).

Based on parity, the majority of respondents were multiparous (38 respondents (51.4%), primiparous (28 respondents (37.8%), and grandemultiparous (8 respondents (10.8%). These results indicate that most of the mothers who responded had previous pregnancy and childbirth experience.

In theory, parity is the number of live births or children a mother has had. Parity influences childbirth because pregnant women have a higher risk of experiencing complications during pregnancy (Zam et al., 2021). Primiparas are mothers who are giving birth for the first time, multiparas are mothers who have given birth several times, and grandemultiparas are mothers who have given birth to many children (Purnamasari & Khasanah, 2020). Primiparas are considered susceptible to preeclampsia, multiparas are considered safe for pregnancy and childbirth without a history of preeclampsia, and grandemultiparas are at the highest risk of developing preeclampsia.

Primiparas are considered susceptible to preeclampsia, while multiparas are considered safe for pregnancy and childbirth without a history of preeclampsia. Grandimultiparas are at the highest risk of developing preeclampsia. The more frequently a mother gives birth, the greater the likelihood of her reproductive organs experiencing decreased function and flexibility. Suboptimal reproductive organ function can disrupt endothelial function due to reduced blood flow, oxygen, and nutrients to the placenta. This can trigger reactions to toxic or sensitizing substances that impact the endothelium, thereby increasing the risk of preeclampsia (Pramesti et al., 2024).

Preeclampsia in Mothers Giving Birth at Jombang Regional General Hospital

Based on the results of the research conducted, it was shown that the majority of respondents (70.3%) did not experience preeclampsia, amounting to 52 out of 74 respondents.

In theory, preeclampsia is a condition characterized by hypertension, edema, and proteinuria that occurs during pregnancy. This condition typically occurs in the third trimester of pregnancy, but it can occur earlier, such as in hydatidiform moles (Prawirohardjo, 2020).

Several factors that trigger preeclampsia in pregnant women include a history of preeclampsia in a previous pregnancy or pre-pregnancy hypertension, high-risk maternal age

(under 20 or over 35), obesity, and high-risk parity (parity of 1 or more than 3). Other contributing factors include type of employment, education level, gestational age, pregnancy spacing, and obesity. These risks can be detected early through antenatal care (ANC) visits, which provide pregnant women with the opportunity to receive education about healthy lifestyles (Pattipeilohy et al., 2023).

Preeclampsia during pregnancy can cause various serious complications for both the mother and fetus. For the mother, this condition can lead to eclampsia, placental abruption, hepatic subcapsular hemorrhage, blood clotting disorders, retinal detachment, and heart problems that can lead to shock and even death.Meanwhile, for the fetus, preeclampsia can inhibit intrauterine growth, cause premature birth, neonatal asphyxia, intrauterine fetal death, and increase perinatal mortality and morbidity. Furthermore, preeclampsia can also lead to other complications such as acute kidney failure, cerebral hemorrhage, liver failure, pulmonary edema, fetal death, and premature delivery (Santi et al., 2022).

Based on the facts and theories above, it can be concluded that preeclampsia is a pregnancy complication that requires special attention because it can have various negative impacts on both the mother and the fetus. The incidence of preeclampsia is influenced by various interrelated risk factors, so identifying and monitoring risk factors early in pregnancy is crucial.

Analysis of the Relationship Between Parity and the Incidence of Preeclampsia at Jombang Regional General Hospital

Based on the data obtained, the majority of mothers giving birth were grandemultipara parity who experienced preeclampsia, namely 6 respondents (75%).

The results of the chi-square test of 74 respondents, the incidence of preeclampsia most often occurred in the grandemultiparous group with a p value = 0.003 where the p value < α (0.05). This indicates that H0 is rejected and H1 is accepted, which means there is a relationship between parity and the incidence of preeclampsia at Jombang Regional General Hospital.

Statistically, this study indicates a relationship between parity and the incidence of preeclampsia. This research aligns with research conducted by Latifah (2023) regarding the factors of age, parity, and body mass index (BMI) of pregnant women related to the incidence of preeclampsia in Tangerang City. From 93 respondents, analysis using the Chi-Square statistical test produced a p-value = 0.003 for the parity variable. This indicates a significant relationship between parity and the incidence of preeclampsia at Tangerang City Regional Hospital.

In theory, preeclampsia is more common in primiparous women due to placental vascular damage triggered by an immunological response, a condition common in primigravidas and women with autoimmune disorders. However, preeclampsia can also occur in grandemultiparous

women, especially if other predisposing factors, such as pregnancy at a later age, are present.

Preeclampsia often occurs during first pregnancies and is associated with a family history of preeclampsia and parity. This condition is caused by excessive stress in primiparous pregnant women, which affects cortisol levels. Increased cortisol levels can trigger hypertension and preeclampsia, impacting fetal development. Meanwhile, in grandemultiparous women, or women with more than four pregnancies, excessive uterine distension can cause ischemia, which can trigger preeclampsia (Lestari et al., 2025).

Based on the facts and theories above, it can be concluded that parity is a factor influencing the development of preeclampsia. Mothers with high parity, especially those who have had more than three pregnancies, are at greater risk of developing preeclampsia. This is due to decreased reproductive function due to repeated pregnancies, which can lead to endothelial dysfunction. This can further reduce blood flow, oxygen, and nutrients to the placenta, ultimately contributing to preeclampsia.

Conclusion

Based on the study results and discussion regarding the relationship between parity and the incidence of preeclampsia among women who gave birth, it can be concluded that there was a significant relationship between the two variables at Jombang Regional General Hospital ($p = 0.003$). Women with high parity (grand multiparity) had a higher proportion of preeclampsia than women in other parity groups.

This study was limited by its relatively small sample size, the use of secondary data from medical records, and its cross-sectional design, which only identifies an association and cannot establish a causal relationship. In addition, the study was conducted at a single hospital, which may limit the generalizability of the findings. Therefore, healthcare institutions and healthcare professionals are expected to improve early screening efforts and regularly monitor pregnancy danger signs, particularly among women with high-risk parity, to prevent preeclampsia complications. Future researchers are encouraged to conduct further studies involving larger samples, multiple healthcare facilities, and other potential risk factors to obtain more comprehensive findings.

Reference

Dinas Kesehatan Provinsi Jawa Timur. (2024). *Profil Kesehatan Provinsi Jawa Timur Tahun 2024*. Dinas Kesehatan Provinsi Jawa Timur.

Kementerian Kesehatan Republik Indonesia. (2023). *Profil Kesehatan Indonesia 2023*. Kementerian Kesehatan Republik Indonesia.

Latipah, S., Afrilia, E. M., & An-nisa, C. (2023). Faktor Usia, Paritas dan IMT Ibu Hamil Berhubungan dengan Kejadian Preeklampsia di Tangerang. *Jurnal Ilmiah Keperawatan Indonesia (JIKI)*, *6*(2). https://doi.org/10.31000/jiki.v6i2.7635

Lestari, D. A., Putri, N. A. M., & Fitriyah, A. (2025). Hubungan Paritas Dan Obesitas Dengan Kejadian Preeklamsia Pada Ibu Hamil Di Rsud Kota Prabumulih. *Jurnal Kesehatan Dan Pembangunan*, *15*(1). https://doi.org/10.52299/jks.v15i2.284

Mustaghfiroh, L., Sari, N., & Prima, R. P. (2020). Usia, Gravida, Status Gizi, dan Riwayat Hipertensi Berhubungan dengan Kejadian Preeklampsia. *Jurnal Ilmiah Permas: Jurnal Ilmiah STIKES Kendal*, *10*(1), 41–50. https://doi.org/10.32583/pskm.v10i1.665

Pattipeilohy, F., Parti, D. D., Firdaus, J., Sakinah, E. N., Cahyana, N. W., & Fatmawati, H. (2023). Hubungan Antara Faktor Risiko dengan Kejadian Preeklampsia di Puskesmas Kencong Jember 2(1), 1-13. *Jember Medical Journal*, *2*(1), 1–13. https://doi.org/10.19184/jmj.v2i1.299

Pramesti, M. A. S., Wulandari, M. A. M., Yumna, N., & Santosa, H. (2024). Hubungan Paritas, Riwayat Hipertensi, dan Indeks Massa Tubuh dengan Kejadian Preeklampsia. *Jurnal Sehat Indonesia (JUSINDO)*, *6*(2), 431–442. https://doi.org/10.59141/jsi.v6i02.95

Prawirohardjo, S. (2020). Ilmu Kebidanan (A. B. Saifuddin, T. Rachimhadhi, & G. H. Wiknjosastro, Eds.; 4th ed.). Bina Pustaka Sarwono Prawirohardjo.

Purnamasari, D., & Khasanah, R. N. (2020). Hubungan Paritas Dengan Pemberian ASI eksklusif di Rumah Konseling Banyuwangi Tahun 2020. Jurnal Healthy, 9(1), 71–76.

Santi, Y. A., Anggraeni, S., & Ernawati, M. (2022). Hubungan Sikap, Paritas, Dan Obesitas Dengan Kejadian Preeklamsia Pada Ibu Hamil Di Poli Obsgin. Gema Bidan Indonesia (e-Journal), 11(4), 115–124. https://doi.org/10.36568/gebindo.v11i4.105

Toruan, Y. L., Yuliana, F., Rahmawati, D., & Haryono, I. A. (2025). Faktor-Faktor Yang Berhubungan Dengan Kejadian Preeklampsia Pada Ibu Hamil Di Rsud Kh Mansyur Kintap Kabupaten Tanah Laut. Jurnal Kesehatan Masyarakat Inovatif, 8(9).

Zam, N., Kumaladewi, H., & Rusman, A. D. P. (2021). Faktor-Faktor Yang Berhubungan Dengan Kejadian Preeklampsiakehamilan Di Rumah Sakit Umum Andi Makkasau Kota Parepare. Jurnal Ilmiah Manusia Dan Kesehatan, 4(1), 59–71. https://jurnal.umpar.ac.id/index.php/makes